What is claimed is:

1. An apparatus comprising:

a volume coil including a plurality of current elements, the volume coil having an aperture formed by removal or displacement of one or more current elements from a regular or symmetric pattern or arrangement of current elements.

2. An apparatus comprising:

a radio frequency magnetic field unit including a plurality of current elements that are asymmetrically arranged, some of which may be physically disconnected from one another and reactively coupled.

3 The apparatus of claim 2, wherein one or more current elements is physically disconnected on one or more ends.

4. The apparatus of claim 2, wherein the plurality of current elements are asymmetrically arranged about a substantially cylindrical form.

5. The apparatus of claim 4, wherein each of the plurality of current elements comprises a resonant current element.

6. The apparatus of claim 5, further comprising a static-field magnetic field unit having a bore, the radio frequency magnetic field unit inserted in the bore to form an imaging unit.

7. The apparatus of claim 2, wherein each of the plurality of current elements is inductively coupled to at least one of the plurality of current elements.

8. The apparatus of claim 2, wherein the each of the plurality of current elements is

capacitively coupled to at least one of the plurality of current elements.

9. An apparatus comprising:

a radio frequency magnetic field unit to generate a desired magnetic field, the radio frequency magnetic field unit having a first aperture formed at an end of the radio frequency magnetic field unit and a second aperture that is substantially unobstructed, wherein the first aperture is contiguous to the second aperture.

10. The apparatus of claim 9, wherein the second aperture has an arc having an arc length of between about 0° and about 90°.

11. The apparatus of claim 10, further comprising a static-field magnetic field unit having a bore, the radio frequency magnetic field unit inserted in the bore to form an imaging unit.

12. An apparatus comprising:

a radio frequency magnetic field unit having a first side aperture, a second side aperture and a pair of end apertures, the first side aperture and the second side aperture contiguous with each of the pair of end apertures.

13. The apparatus of claim 12, wherein the radio frequency magnetic field unit comprises a substantially cylindrical volume having a curved arrangement of current elements with the first side aperture and the second side aperture located along the curved arrangement and the first side aperture located substantially opposite from the second side aperture.

14. The apparatus of claim 13, wherein the first side aperture has a first width and the second side aperture has a second width that is about equal to the first width.

15. The apparatus of claim 14, further comprising a static-field magnetic field unit having a bore, the radio frequency magnetic field unit inserted in the bore to form an imaging unit.

16. A method comprising:

removing one current element from a first radio frequency magnetic field unit to form a second radio frequency magnetic field unit having an aperture.

17. The method of claim 16, further comprising:

calculating and implementing a set of currents to generate a desired magnetic field in the second radio frequency magnetic field unit.

18. A method comprising:

removing two or more adjacent current elements from a first radio frequency magnetic field unit to form a second radio magnetic field unit having an aperture.

19. The method of claim 18, further comprising:

calculating and implementing a set of currents to generate a desired magnetic field in the second radio frequency magnetic field unit.

20. A method comprising:

removing two oppositely positioned current elements circuits from a first radio frequency magnetic field unit to form a second radio frequency magnetic field unit having a first aperture and a second aperture.

21. The apparatus of claim 1, wherein the remaining pattern or arrangement of current elements is capable of producing a desired field and the desired field is restored, compensated or otherwise effected by adjustment of currents in the plurality of current elements.

22. The apparatus of claim 21, wherein the volume coil includes a top and one or more of the regular or symmetric pattern or arrangement of current elements is removed from the top for improved access from the top and the desired field is restored.

23. The apparatus of claim 21, wherein the volume coil includes an open end and a closed end, the closed end being closed by a conductive plane.

24. The apparatus of claim 21, wherein the volume coil includes two open ends.

25. The apparatus of claim 22, wherein the volume coil capable of being used in head imaging.

26. The apparatus of claim 23, wherein the volume coil is capable of being used in head imaging.

27. The apparatus of claim 24, wherein the volume coil is capable of being used in head imaging.

28. The apparatus of claim 21, wherein the volume coil is capable of being used in head imaging.

29. The apparatus of claim 21, wherein the volume coil is capable of being used in extremity imaging.

30. The apparatus of claim 21, wherein the volume coil is capable of being used in foot and ankle imaging.

31. The apparatus of claim 21, wherein the volume coil includes an impedance and the impedance is adjusted to control current in the plurality of current elements.

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32. The apparatus as in 31, wherein the impedance is adjusted by adjusting a capacitance.

33. The apparatus as in 31, wherein the impedance is adjusted by adjusting an inductance.

34. The apparatus of claim 21, further comprising a radio frequency conductive front end ring coupled to the plurality of current elements and a radio frequency conductive back plane coupled to the plurality of current elements.

35. The apparatus of claim 21, further comprising a radio frequency conductive front end ring including a gap, the radio frequency conductive front end ring coupled to the plurality of current elements and a radio frequency conductive back plane coupled to the plurality of current elements.

36. The apparatus of claim 21, further comprising a radio frequency conductive front end ring coupled to the plurality of current elements and a radio frequency conductive back end ring coupled to the plurality of current elements.

37. The apparatus of claim 21, further comprising a radio frequency conductive front end ring including a gap and a radio frequency conductive back end ring including a gap, the radio frequency conductive front end ring and the radio frequency conductive back end ring coupled to the plurality of radio frequency current elements.

38. The apparatus of claim 21, further comprising a slotted shield or cavity wall coupled to the plurality of radio frequency current elements.

39. The apparatus of claim 21, further comprising a window or aperture in shield or cavity in approximate line with missing or displaced element or elements.

40. The apparatus of claim 39, wherein the volume coil includes an open end and a closed end, the closed end being closed by a conductive plane.

41. The apparatus of claim 39, wherein the volume coil includes two open ends.

42. The apparatus of claim 39, wherein includes a top and one or more of the regular or symmetric pattern or arrangement of current elements is removed from the top for improved access from the top.

43. The apparatus of claim 40, wherein the volume coil capable of being used in head imaging.

44. The apparatus of claim 41, wherein the volume coil is capable of being used in head imaging.

45. The apparatus of claim 42, wherein the volume coil is capable of being used in head imaging.

46. The apparatus of claim 39, wherein the volume coil is capable of being used in body imaging.

47. The apparatus of claim 39, wherein the volume coil is capable of being used in extremity imaging.

48. The apparatus of claim 39, wherein the volume coil is capable of being used in foot and ankle imaging.

49. The apparatus of claim 39, wherein the volume coil includes an impedance and the

impedance is adjusted to control current in the plurality of current elements.

50. The apparatus of claim 39, wherein the impedance is adjusted by adjusting a capacitance.

51. The apparatus of claim 39, wherein the impedance is adjusted by adjusting an inductance.

52. The apparatus of claim 39, further comprising a radio frequency conductive front end ring coupled to the plurality of current elements and a radio frequency conductive back plane coupled to the plurality of current elements.

53. The apparatus of claim 39, further comprising an open front end ring coupled to the plurality of current elements and a radio frequency conductive back plane coupled to the plurality of current elements.

54. The apparatus of claim 39, further comprising a radio frequency conductive front end ring coupled to the plurality of current elements and radio frequency conductive back end ring coupled to the plurality of current elements.

55. A apparatus of claim 39, further comprising a front end ring including a gap coupled to the plurality of current elements and a back end ring including a gap coupled to the plurality of current elements.

56. The apparatus of claim 39, further comprising a slotted shield or cavity wall.

57. The apparatus of claim 21, further comprising means to actively detune/retune the volume coil for use with a local receiver coil.

58. A apparatus of claim 21, wherein the volume coil is double tuned or multiple tuned.

59. The apparatus of claim 21, wherein the volume coil is double tuned by the Vaughan method.

60. A transverse electromagnetic coil cavity including current elements, the transverse electromagnetic coil having windows or apertures cut between current elements to allow access through the current elements.

61. The apparatus of claim 21, further comprising a mirror or prism mounted over the window or aperture.

62. The apparatus of claim 39, further comprising a mirror or prism mounted over the window or aperture.

63. The apparatus of claim 9, further comprising one or more apertures formed on a side of the radio frequency magnetic field unit to permit access to a subject's ears.

64. The apparatus of claim 63, further comprising an auditory communication device to communicate through the one or more apertures.

65. The apparatus of claim 64, wherein the communication device provides active or passive auditory protection.

66. The apparatus of claim 12, wherein the radio frequency magnetic field unit includes a top-half and a bottom-half, the top-half capable of being mechanically attached and detached to the bottom-half at the first side aperture or the second side aperture.